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# Operational Fires: Taking Joint Fires to the Next Level

By

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of Defense.

Signature: _***Original Signed***_

17 May 2005

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## Abstract

Joint fires proved extremely effective during decisive operations in Operation Iraqi Freedom. The integration, synergy, and effectiveness of these fires were the result of Tactics, Techniques, and Procedures (TTPs) developed to work around ineffective joint doctrine. These TTPs proved to be extremely flexible, effective and improved the focus and situational awareness of the operational fires. These TTPs should be incorporated into Joint Fires Doctrine; this can be further strengthened with a change to joint doctrine that mandates a Joint Fires Element. A standing Joint Fires Element can improve the overall integration and synchronization of operational fires in support of the Joint Force Commander's objectives, and can also act as an advocate to ensure joint fires remain an integrated and synchronized aspect of future doctrinal concepts.

## INTRODUCTION

The First Marine Expeditionary Force (I MEF) Commander's guidance to the force was to use speed, tempo and aggressive action to overwhelm the Iraqi forces south of the Euphrates River and to gain a foothold across the Euphrates as rapidly as possible, meeting Joint Force Land Component Command (JFLCC) guidance.

I MEF actions south of the Euphrates were war gamed extensively—the capabilities and requirements necessary to accomplish the mission were analyzed and the planning and execution of the scheme of fires to support maneuver were fully considered. Red cell interaction with the planning group predicted hard fighting by Iraqi regular army forces in an effort to slow the advance of the LCC forces. Their intent was to delay U.S. forces from crossing the Euphrates River; thereby, inflicting as many casualties as possible on American ground forces. One of the key features of the fight was the placement of the Fire Support Coordination Line (FSCL) by the Joint Task Force (JTF) Commander—the initial FSCL was determined to coincide with the path of the Euphrates River—allowing the more capable forces north of the River to be isolated and shaped, while the initial battle was fought south of the river.

Unfortunately, the plan barely survived first contact with the enemy. The ferocity of I MEF's maneuver and combined arms fires shattered the Iraqi forces in zone, freeing up large portions of the ground combat element (GCE) to use their initiative to achieve the MEF Commander's desire to secure crossing sites across the Euphrates in preparation for the eventual push to Baghdad. Within eighteen hours the first elements of First Marine Division were maneuvering north and west of An Nasiriyah in search of acceptable fording sites for Light Armored Vehicles (LAVs) and Armored Assault Vehicles (AAVs). Recognizing the situation called for a change in fire support coordination measure, the MEF Force Fires Coordination

center (FFCC) called the Deep Operations Coordination Cell (DOCC) and requested an immediate shift of the FSCL to its next pre-planned location. The response was quick and disruptive—denied. The DOCC and the operations officer further stated the Marines had to wait for the shift for the required six to eight hours required to properly coordinate the shift with the Joint Force Air Component Commander (JFACC); however, that process was being delayed while V Corps forces fought a more robust threat in zone. Worse yet, I MEF Forces were to remain south of the Euphrates until the FSCL had been shifted north.

Fortunately, the above incident describes a MAGTF Staff Training Program (MSTP) exercise designed to improve I MEF's ability to perform its command and control function in Central Command's (CENTCOM) area of responsibility (AOR) more than a year prior to Operation Iraqi Freedom (OIF).[1] The MSTP evaluators did provide a realistic JFLCC response; the FSCL was essentially treated as a boundary to preserve the effectiveness of the JFACC's shaping operations north of the Euphrates River.

The effectiveness of the joint force commander (JFC) is largely dependant on the effectiveness of his operational fires to set the conditions for success and to achieve his overall objectives in mid to high-intensity conflict. OIF demonstrated the tremendous combat power that can be brought to bear on an adversary and proved an exponential improvement over the Joint Force's performance during Operation Desert Storm (ODS). The after actions, exercises, and operations post-ODS contributed to operational fires improvements that afford the United States an overwhelming advantage against our potential adversaries. Despite these improvements, there is still a good deal of room for improvement. The doctrine for joint fire support is insufficient, and results in a battle space segregated between the component commanders, thus failing to achieve maximum synergy between the ground and air components.

Capturing this synergy will raise operational fires to a new plateau of unprecedented performance. However, this requires changes in two deficient areas—doctrine and the manning and organization of the Joint Fires Element. Doctrine needs to reflect the Tactics, Techniques, and Procedures (TTPs) that were used to synchronize and integrate the battlespace during OIF, which led to coalition forces overwhelming Iraqi opposition. This will require swallowing some service parochialism and improving interoperability issues that affect synchronization and integration of the battle space. Improvements in doctrine alone will still not solve the overall integration issues that will still exist. To truly synchronize and integrate fires today and more importantly in joint operational concepts, doctrine needs an advocate—a Joint Force Fires Element with a full time Coordinator. Eliminating the "optional" tag and giving the organization its proper place can further improve joint doctrine, reduce service parochialism and truly integrate the battlefield of the twenty-first century for the JFC. Absent a standing element, joint fires will lack the strong voice in the advocacy process and operational development and there is a distinct danger that fires provided to the JFC will migrate back to a segregated, service-centric fight; failing to capitalize on the synergies of operational fires and maneuver.

This study will examine why the existing doctrine limits the effectiveness and the synergistic potential of the joint force. The lack of sufficient doctrinal detail relating operational fires forced the services and theater commanders to adopt TTPs on an ad hoc basis but they proved extremely effective in OIF. The most promising of these TTPs will be examined. To compliment advances in doctrine this study will show the need for a standing joint fires element at each warfighting combatant command to eliminate service-centric tendencies and capture the synergy of joint fires in order for the JFC to accomplish his overall objectives. Further, as joint operational concepts migrate slowly towards operational reality, a standing joint fires element

can ensure operational fires' TTPs are fully integrated and tested as part of the overall operational scheme.

Joint doctrine is intended to capture the strengths and weaknesses of the services and blend them into a formidable, synergistic whole much greater than the sum of its parts. Joint fires doctrine falls short due to insufficient detail on how services and component commanders can effectively integrate and synchronize the battlespace. Joint doctrine defines 'Fires' as the effects of lethal and nonlethal weapons. Fires include both lethal and nonlethal weapons effects, because both types of effects must be synchronized and integrated to achieve synergistic results. These fires can be delivered by air, land, naval, and special operations forces (SOF), and space assets. Lethal means at the operational-level of war include strike aircraft, ATACMS, Tomahawk missiles, and SOF direct action missions. Nonlethal weapons effects include those from electronic warfare (EW), certain psychological operations (PSYOP) such as leaflet drops, and some information operations (IO) such as disrupting the enemy's information networks.[2] Inherent in successful joint fires throughout the JOA is the ability of the JFC and the component commanders to synchronize fires in time, space and purpose to increase the effectiveness of the joint force. [3] According to JP 3-09, Joint Fires are those fires produced during the employment of forces from two or more components in coordinated action toward a common objective. [4]

Continuing with the joint doctrine, a key factor to the success of joint operations is teaming the effects of joint fires with actions of the component commanders within the joint force. The process that links this together is joint fire support. Joint fire support links weapons effects to land, maritime, amphibious, and special operations forces movement, maneuver, and control territory, populations, and key waters. The Joint Fires Coordinator ensures that lethal and non-lethal effects from joint fire support are integrated with maneuver of the supported force

to achieve synergistic results in combat power. Guidance from the JFC assists component commanders' planning, coordination, and synchronization of limited fires resources. Additionally, the JFC's organization of forces establishes the supported and supporting relationships essential to synchronizing operations, preventing fratricide, and maximizing the effectiveness of fires.[5]

Usually, the land and naval force commanders are the supported commanders within the areas of operations (AOs) designated by the JFC. Within their designated AOs, land and naval force commanders synchronize maneuver, fires, and interdiction. To facilitate this synchronization, such commanders have the authority to designate the target priority, effects, and timing of fires within their AOs.[6]

Joint doctrine continues with a statement that is fairly vague and its interpretation has had a divisive effect when adopted into service and component doctrine. Specifically, "[I]n coordination with the land and/or naval force commander, those commanders designated by the JFC to execute theater- and/or JOA-wide functions have the latitude to plan and execute these JFC prioritized operations and attack targets within land and naval AOs."[7] The theater-wide process that relates to operational fires is interdiction. Interdiction is defined as action to divert, disrupt, delay, or destroy the enemy's surface military potential before it can be used effectively against friendly forces.[8] The ground and air components agree to a certain extent that 'effective interdiction occurs when it is synchronized with maneuver to support the concept of the operation of a single commander.' To a much lesser extent, ground and air components understand that when joint 'operations are integrated and synchronized with maneuver, they present the greatest dilemma to the enemy.'[9]

The seams in the doctrine have been exploited on the "air side" of the equation. Air Force doctrine includes the same wording as the joint doctrine and even Army doctrine; however, their doctrine contains a definitive 'we can do it alone' undercurrent. In particular, Air Force doctrine specifies:

> By wresting the initiative, setting the terms of battle, establishing the tempo of operations, and taking advantage of tactical and operational opportunities, aerospace forces can defeat the adversary's strategy…Aerospace forces, however, are able to proceed directly to their intended targets without the need for large-scale reaction to the enemy. As such, they should be thought of as true operational maneuver elements in their own right, and **not just as "fires" supporting the surface component** (emphasis added). (Air Force Doctrine Document (AFDD)-2, 5.)

This has influenced the interpretation of join fire support doctrine to the extent that operational fires have segmented the battlefield. Seeing the results of a segmented battlefield on the destruction of Iraqi forces in OIF makes one ponder the power of a fully integrated joint battlespace—supported by seamless, synchronized and integrated joint fires.

Absent a unifying operational concept such as maneuver warfare, Air Land battle, or even Effects-Based Operations, operational fires has become somewhat disjointed and inefficient because of service bickering and distrust. Joint doctrine needs an overhaul, because as pointed out in an outstanding article by Price Bingham, "…joint doctrine has serious flaws. Its guidance on how to create synergies through the integrated employment of forces provided by the various services is vague and provides for laborious processes that encourage service-centric rather than truly joint operations."[10]

Fire support coordination measures (FSCMs) have expanded in recent years from fratricide prevention/fires facilitators to a convenient way to divide and synchronize the battlespace. In the course of this expansion, the FSCM that generates the most heated discussion amongst service and functional components—because it is viewed as dividing line that

segregates the battlefield and adversely (unintentionally) affects the interoperability and integration of joint fires—is the FSCL.[11] Despite being "anointed" a permissive measure, the FSCL exhibits both permissive and restrictive attributes.

The FSCL's purpose is to facilitate the expeditious attack of targets of opportunity beyond the coordinating measure. *An FSCL does not divide an AO*. An FSCL is established and adjusted by the appropriate land or amphibious force commanders within their boundaries in consultation with superiors, subordinate, supporting and affected commanders.[12]

Its restrictive characteristics are highlighted by the phrase: "Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide, both in the air and on the ground."[13] Short of an FSCL, the appropriate land or amphibious force commander controls all air-to-ground and surface-to-surface attack operations. *The FSCL is not a boundary*—the synchronization of operations on either side of the FSCL is the responsibility of the establishing commander out to the limits of the land or amphibious force boundary. Doctrine specifies that air strikes short of the FSCL (both CAS and air interdiction (AI[µ])) must be under positive or procedural control.[14]

Multiple sources highlighted the historical lineage of the FSCL, dating back to a ground-air deconfliction and fratricide avoidance measure used in World War II (Bomb Coordination Line), but the FSCL truly came of age in the Air Land Battle Doctrine of the 1980s. Air Land Battle doctrine was the Army and the Air Force's 'joint' concept for dealing with massive Soviet ground forces attacking through the Fulda Gap in Germany. The salient content of the doctrine was the requirement for the Air Force to solely 'shape' and 'attrit' Soviet ground units before they became engaged in close combat with ground forces. In assuming this responsibility, the

[µ] JP 1-02 defines air interdiction as air operations conducted to destroy, neutralize or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that **detailed integration** of each air mission with the fire and movement of friendly forces **is not required**.

Air Force also assumed responsibility for synchronizing that portion of the battlespace. In order to delineate the difference between close/deep and, in effect air/ground the doctrine used the FSCL as the dividing line—both parties agreed, out of necessity. Relating this 'deal' to the analogy used in operational law, "standard practice" becomes the norm which eventually supersedes the law—the Air Force became accustomed to ownership and synchronization of the deep battle and they used the FSCL as the boundary between them and the accompanying ground forces.[15]

The Army supplemented and complimented its organic fires in the Air Land Battle by using Air Force "air interdiction" assets beyond the range of organic, indirect fire systems but short of the FSCL. These Air Force assets were tasked, prioritized and synchronized with the ground scheme of maneuver in a sub-set of air interdiction called Battlefield Air Interdiction (BAI). This afforded the Army Commander the latitude to set the priority and timing of attacks against target sets he felt set the conditions for the close fight and his operational maneuver.[16] As the result of inherent distrust for the Air Force's ability to conduct the deep battle to their liking, the Army covered its 'six' and acquired two extremely lethal, deep attack systems—the Army Tactical Missile System (ATACMS) and the AH-64 Apache attack helicopter.

Events came to a head during Desert Storm that further strained the relationship between the Army and the Air Force. First, the air component commander eliminated BAI from the apportionment decision, and also decided to focus his attention solely on the deep fight (using his timing, priorities, etc). In doing so, the "JFACC used the FSCL as a dividing line between planned air interdiction and CAS operations…accepting all responsibility for synchronizing the deep-attack operations, Gen Horner stated: 'if it's inside the fire support coordination line, don't bother me. If it's not, put it in the ATO.'[17]

During ODS the Army was not satisfied with the JFACC's prosecution of the deep battle. Specifically, the Army felt 'counter-land' targets failed to receive adequate resources and/or prioritization in the overall scheme. Moreover, the JFACC's ownership and synchronization of the deep fight proved too much for Army liking. In an effort to regain control of and synchronization of the deep fight, the Army insisted that the FSCL be shifted far to the front of the rapidly advancing ground forces, but instead created an area of unintended sanctuary for the retreating Republican Guard units.[18] This sanctuary just inside the FSCL meant the retreating forces were subject to a one-dimensional attack, safe from swarming attacks by Air Force assets slowed and hampered by extensive and cumbersome coordination requirements.[19]

Fast-forward to the present and there is still controversy over the FSCL and its placement on the battlefield. The debate remains fixed on synchronization, integration, and actions on either side of this 'permissive' fire support coordination measure. The Air Force maintains it is responsible for coordinating the theater-wide interdiction effort and should be the supported commander in this regard.[20] The controversy with the FSCL returns because of insistence that AI missions should only be flown beyond the FSCL.[21] There was even a mild controversy over Vth Corps' placement of the FSCL (apparently the JFACC felt it was too far from the FLOT for too long a period of time) during OIF. It was bothersome enough that the Vth Corps commander defended his decisions regarding the placement of the FSCL using statistics from the events and tallying the time/distance factor in their defense.[22]

Bickering continues over the FSCL's placement, so it is still an issue. The chief disconnect is the fact that joint doctrine specifies the LCC as the supported commander and tasks him to coordinate and integrate operations on either side of the FSCL. Running afoul of the joint doctrine is the Air Force insistence on taking charge of all aspects of operations beyond the

FSCL, including coordination and synchronization of all fires.[23] Doctrinally, the result is a divided battlespace, where the enemy deals with only a one-dimensional attack, ignoring the synergy brought by a vigorous, aggressive combination of operational fires and operational maneuver.[24]

## WORKING AROUND THE PROBLEM

Throughout the debates on the efficacies of FSCMs and the like, unified commanders in Korea, CENTCOM, and EUCOM developed workarounds to fill the seams in joint doctrine by using TTPs to reduce friction between the services. EUCOM, Korea and CENTCOM have all adopted separate ad hoc TTPs to synchronize and integrate the battlespace that are forced upon the major subordinate elements fighting in their AORs.[25]

There exist a host of these ad hoc measures designed to unify the battlespace using operational fires. One adaptation was the FSCM adopted by Marine Forces operating on the Korean Peninsula and in the deserts of the Middle East. I MEF, preparing for combat in both CENTCOM and Korean Theaters, found it necessary to compensate for the depth of the FSCL, and still achieve the synergy of their "single battle" within the MEF battlespace. Hampered by a dearth of artillery, the MEF sought to capitalize on its organic air fires and use the placement of the FSCL to its advantage. Integration within the Marine Air Ground Task Force was achieved using a supplementary, non-doctrinal FSCM to eliminate gaps in the MEF battlespace.[26] The MEF FFCC created the Battlefield Coordination Line (BCL), designed to integrate artillery fires in the close fight with operational fires from Marine aviation and attached MLRS/ATACMS support from the Army. Integration is achieved by the FFCC by properly placing the BCL in close consultation with the division commander and the wing commander. Proper placement allows the MEF to remain focused on the "Deep" fight using fixed-wing assets from the Marine

Air Wing to shape and influence the "Deep" battlespace, absent the burdensome requirements for CAS close coordination. Nominations beyond the FSCL, considered the MEF Deep-Deep fight are intended to set the conditions for the MEF-Deep and close fight (see Figure 1).

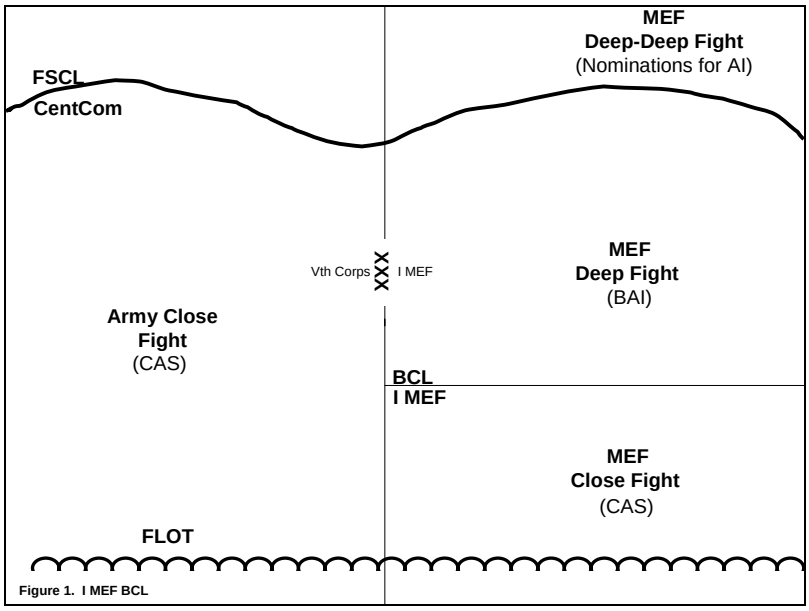

Figure 1. I MEF BCL

"The Battlefield Coordination Line adopts the **fully permissive** functionality of the FSCL within the MEF's AO by establishing an Air Space Coordination Area (ACA) in conjunction with the space that allows artillery or attached MLRS fires beyond the BCL out to the limits of the FSCL or forward-boundary."[27] Surface-to-surface fires are permitted in the MEF-deep area as long as they do not violate generous altitude restrictions designed to avoid fratricide with fixed-wing aircraft conducting attacks. Essentially, the MEF commander is capitalizing on BAI—a mission the Air Force flushed its operational concepts. The result is a "single battle," recognized and envied by the other services.

A more mainstream version of a joint doctrine "work around" that has garnered even more support and popularity than the BCL is the kill box technique. Honed extensively in exercises and most recently in OIF, the "kill box" should be adopted soon into multi-service

TTPs.[#] The kill box is a reference system merged with FSCMs making a flexible tool to focus lethal and nonlethal effects on the battlefield. The kill box was designed to integrate the battlespace, absent the restrictive burdens of the FSCL, and its onerous tempo killing time requirements. The kill box also shows much greater flexibility in application to non-linear battespace and/or urban operations where linear measures may prove too cumbersome or confusing. The JFC Commander designates an Executive Agent (EA) responsible for friendly deconfliction and clearance of fires within the kill box, normally one of the component commanders (JFACC, JFLCC, JFMCC or JFSOCC).[28]

The kill box is color-coded so that the purpose of its design is intuitive based on the situation and priorities from the JFC. The two designations are 'blue' and 'purple' with activity codes of 'established' or 'closed.' Established kill boxes are preplanned and designed to focus operational fires on the supported commander's designated targeting priorities, effects, and desired timing.[29] When an established kill box is open, it allows engagement within the area covered without further coordination or deconfliction. These established kill boxes can be active (the EA actually has aircraft operating within the three-dimensional space designated) or cold, meaning the fires are authorized but no missions or fires are currently being prosecuted.[30]

Blue and purple coloring schemes are intuitive. A Blue Kill Box allows air-to-surface fires to prosecute targets without further coordination or deconfliction with ground scheme of maneuver or surface-to-surface fratricide risk. This affords the JFC the opportunity to allow asymmetric attacks from the air to proceed unimpeded by ground coordination requirements.

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[#] Joint Publication 1-02, defines a 'kill box' as: A three-dimensional area reference that enables timely, effective coordination and control and facilitates rapid attacks." There is currently no formal kill box doctrine or Tactics, Techniques and Procedures (TTPs) which is why the Air Land Sea Application Center (ALSA) is attempting to have the services adopt a Multi-service TTP for the planning, development, and execution of use and employment of kill boxes. In the 'signature draft', the ALSA Center has modified the definition and adopted the term into the FSCM lexicon (p.i).

Accordingly, trajectories and effects of surface-to-surface indirect fires are not allowed to pass through a blue kill box. The Purple Kill Box, as the name implies, integrates air-to-surface and surface-to-surface attack; thereby, creating a synergistic effect and maximum potential for engaging targets. As with the BCL previously mentioned, fratricide is avoided by associating an ACA within the three-dimensional space—an altitude restriction that cannot be violated by surface weapon trajectories. A purple kill box is the same as a blue, but goes a step further and permits the integration of surface-to-surface and air-to-surface fires in the kill box without further coordination.[31]

The size of the three-dimensional area within the kill box will be decided by the JFC to allow for differences in terrain, enemy capabilities, and urban or open battlespace; however, the tactics and terminology will be standardized and, therefore, well understood. The kill box scheme can either substitute (not the intention) or compliment other FSMCs such as the FSCL. The designation of the kill box, however, will take precedence over other permissive measures when they are established. Kill boxes are plagued by the common side-effect brought by creating an aggressive, fires-centric coordination measure; "there should be no friendly ground forces within or maneuvering into established kill boxes, if the requirement is necessary, then an appropriate restrictive fire support coordination measure should be applied" (see Figure 2).[32]

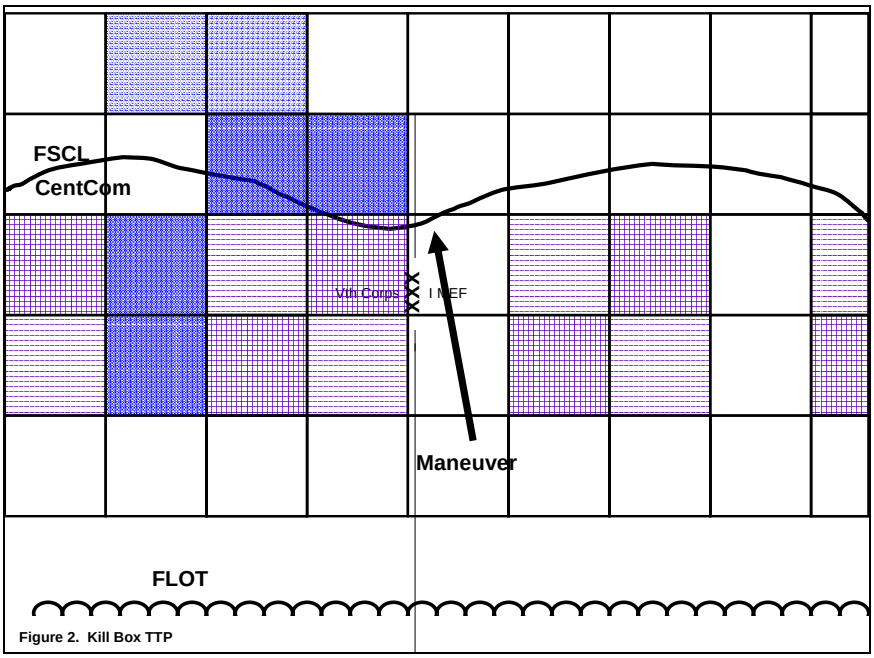

Figure 2. Kill Box TTP

In fact, Vth Corps' AAR states the average time for an ATCMS missile engagement from the target was identified until the missile left the launcher was reduced from over one hour (thirty-two missiles fired), to less than seven minutes (414 fired)—a phenomenal improvement in responsiveness, giving credit to the flexibility and responsiveness associated with the kill box methodology.[33] Further, Vth Corps use of kill boxes allowed them use of the retro-technique of BAI. General Wallace specifically highlighted the remarkable effectiveness of BAI in their after action report, estimating that BAI was 270% more effective than kill box AI sorties—because the BAI captured the powerful synergy of air attacks synchronized with operational maneuver.[34]

Unfortunately, the application of the kill box/common reference system differs theater by theater enough to dilute its effectiveness by forces tasked to fight in several or all theaters. Adopting a universal application of this TTP, incorporating the views of each service, would result in extremely effective joint fires doctrine.[35]

## JOINT FIRES ELEMENT: THE WEAK AND/OR MISSING LINK

He who sets out to be liked by all will fail.
Machiavelli, *The Prince*

Current joint doctrine states the JFC *may***,** as a subordinate to the J-3, form a Joint Fires Element (JFE) to be the staff advisor for the coordination, integration, and synchronization of fires with other major elements of the campaign such as maneuver, information operations, and logistics.[36] Because the JFE is an *optional* staff element, formed in the absence of sound doctrinal guidance, joint headquarters tend to be dominated by one service, improperly trained to dynamically integrate the other services into the fight.[37] This arrangement has contributed to service distrust, parochialism and the resulting inefficiencies that have divided the battlespace.

In the operational fires community "'jointness' is often interpreted as a 'federated' rather that an 'integrated' or 'unified' application of service components."[38] This federation for operational fires has led the JFE to sub-contract responsibilities to the deep fight to the JFACC (air operations cell) and the synchronization of maneuver with fires has been sub-contracted to the LCC—using the Deep Operations Coordination Center (DOCC) and the mile-wide and inch deep Battlefield Coordination Detachment (BCD).[39] In an effort to exert some degree of control over the process, the JFE utilizes the Joint Target Coordination Board meeting (a daily meeting lasting several hours) to integrate and synchronize the battlespace for the JFC using predominantly his targeting priorities and guidance.

A chief reason for sub-contracting this responsibility is the fact that the JFE is improperly manned and equipped to manage the JFC's deep battlespace effectively. The danger in abdicating the responsibility for integrating operational fires with aggressive operational maneuver is that subordinate's operational areas develop into separate and distinct campaigns, ruining what should be a unified effort toward the overall objectives.[40]

Perhaps of greater concern than abdicating the current fight to subordinates is the fact that the *optional* JFE will have little or no influence over operational fires integration into future joint concepts. As the military seeks to create an agreed upon joint operational framework, given the current arrangement, operational fires will be no better than an afterthought, rather than the glue that should hold the various operational functions together. Absent a strong voice on fires issues, the next concept—likely Effects-Based Operations—might become the antithesis of joint warfighting, discounting the considerable synergies that joint forces can generate taking advantage of strategic attack and operational fires *in conjunction with* dominant maneuver.[41]

Two areas require greater attention and improvement in the JFE based on their dis-jointed and ineffective results during OIF. The first area is integration and synchronization of nonlethal fires with joint operational maneuver and lethal fires. The Army surmised that—due to poor synchronization, poor feedback mechanisms and no doctrinal foundation—nonlethal fires had little "effect" on OIF operations.[42] The other area of particular concern was the integration of Special Operations Forces 'fires' with conventional attack. Unfortunately, these became independent operations because of integration and synchronization issues. Accordingly, SOF attacks failed to achieve their potential synergistic effect on the overall effects-based fires scheme.[43]

Overall, a properly manned JFE could eliminate some of the service-centric seams in fires and lead to a better overall integration and synchronization of the battlespace by taking ownership of the deep fight on either side of the FSCL, eliminating the conflict between the JFACC and the LCC. This in turn would allow his component commanders to focus greater attention planning and executing assigned missions.[44]

## RECOMMENDATIONS AND CONCLUSIONS

In preparation for OIF the services recognized the weakness in joint fires doctrine and took aggressive steps to find a better methodology. As a result, the services adopted extremely promising TTPs that dramatically improved the performance of joint operational fires by comparison to Desert Storm.

Using the dialectic methodology in developing the grid box TTPs, theater commanders and the services created a superb degree of integration and synchronization. The effects of blending the common reference system with FSCMs dramatically improved the focus and situational awareness of the joint force and the results were telling in flexibility, effectiveness and efficiency (at least for lethal fires). The grid box TTP provides the fratricide protection the air component desires and the flexibility the JFC requires by because it is equally effective in a linear or non-linear battlespace, is scalable based on urban or mountainous terrain, and can be quickly adapted to the dynamics of the twenty-first century battlespace because of the superb situation awareness it provides the JFC and his subordinates.[45]

To improve the synergy between the LCC and the JFACC, BAI should be returned to the apportionment decision. This will allow the JFC to create better integration of the force by increasing interdependence of air and ground forces understanding that the leaner, lighter Army will require more air fires and the Air Force can become more effective against an enemy that will disperse and hide by allowing the land forces to flush them from hidden positions.[46]

Adopting these TTPs into doctrine may not achieve nirvana, however, post-Desert Storm advances in the effectiveness of operational fires doctrine "came from identification of a problem, a reassessment of doctrine, experimentation with various ideas, disseminating what worked, and training the new technique."[47] Reflecting on the marked improvement the forces

achieved by synthesizing lessons learned into the kill box technique is staggering. Moreover, this hypothesis—antithesis—synthesis methodology could assist transitioning control and primacy of the deep fight to the JFC.

This shift in control of the deep fight can only occur if there is a dedicated advocate for joint fires, properly manned and equipped for his new responsibilities. This would add synergy to the JFC's battle much like Emeril Lagasse adds his spice to a meal—BAMM!—operational fires achieve the next level of performance.[48]

## ENDNOTES

[1] The MSTP Exercise was scheduled for August 02 and was originally designed to work command relationships and staff actions for the I MEF Staff utilizing OPLAN 5027 as a framework. Then LtGen Hagee shifted the execution of the exercise from August to early June 02 and asked the Team to test the MEF staff and its major subordinate elements on the MEF's role in OPLAN 1003V.
[2] Joint Pub 3-09, (Washington, DC: U.S. Joint Chiefs of Staff, 12 May 1998), I-1.
[3] Ibid., v.
[4] Ibid.
[5] Ibid., v-x.
[6] Ibid., I-2.
[7] Ibid., I-3.
[8] Joint Pub 1-02, "Department of Defense Dictionary of Military and Associated Terms." (Washington, DC: U.S. Joint Chiefs of Staff, 12 April 2001), 268.
[9] Field Manual 3-0, "Operations," (Washington, DC: Department of the Army, June 14, 2001), 2-21.
[10] Price T. Bingham, "Seeking Synergy: Joint Effects-Based Operations," Joint Force Quarterly (Spring 2002), 58.
[11] LTC Scott Thein, U.S. Army, "Army/Air Force Conflict Over the Deep Fight: Time to Stop the Bickering," (U.S. Army War College: April 2001), 10-14.
[12] Joint Pub 3-09, (Washington, DC: U.S. Joint Chiefs of Staff, 12 May 1998), A-1 – A-3.
[13] Ibid., A-2.
[14] Ibid., A-2 – A-3.
[15] Lt Col R. Kent Laughbaum, U.S.A.F., "Synchronizing Airpower and Firepower in the Deep Battle," (Air University Press: 1999), 3.
[16] Ibid., 60-63.
[17] Ibid., 35.
[18] Ibid., vii.
[19] Thein, 12.
[20] Air Force Doctrine Document-2, 56.
[21] MG David A. Deptula, U.S.A.F. and Lt Col Sigfried J. Dahl, U.S.A.F., "Transforming Joint Air-Ground Operations for 21st Century Battlespace," Field Artillery, (July-August 2003), 23.
[22] LTG William S. Wallace, U.S. Army, "Joint Fires in OIF: 'What Worked for the Vth (US) Corps'." Vth Corps FSCL vs Killbox & Vth Corps OIF Employment Slides.
[23] Thein, 14.
[24] Colonel Gary Cheek, U.S. Army, "Effects-Based Operations: The End of Dominant Maneuver?" Strategic Studies Institute (U.S. Army War College: 2002), 83.
[25] Thein, 17.
[26] LtCol Michael R. Kennedy, U.S.M.C. and LtCol Larry J. Holcomb, U.S.M.C., "Genesis and Development of the Battlefield Coordination Line," Marine Corps Gazette, (April 2002), 64.
[27] Ibid., 64-69.
[28] Kill Box—Multi-Service Tactics, Techniques, and Procedures for Kill Box Employment, (Air land Sea Application Center: April 2005), II-1 – II-2.
[29] Ibid., I-3 – I-4.
[30] Ibid., I-2.
[31] Ibid., I-1 – I-2.
[32] Ibid., I-3 – I-4.
[33] "Operation Iraqi Freedom Observations: Quick Look." Precision Strike Slide.
[34] Wallace, Vth Corps Shaping Slide.
[35] MAJ Adam J. Legg, U.S. Army, "JTRGS: Common Reference System for Coordinating and Synchronizing Joint Fires," Field Artillery, (May-June 2001), 36.
[36] Joint Pub 3-09, I-5.
[37] Bingham, 58.
[38] Deptula, 23.
[39] LTC Thomas L. Kelly, U.S.Army, and LTC John P. Andreasen, U.S.Army (ret), "Joint Fires: A BCD Perspective in Operation Iraqi Freedom," Field Artillery, (November-December 2003), 20-25.

[40] Leonard G. Tokar Jr., "U.S. Doctrine for Command and Control of Operational Fires," (School of Advanced Military Studies: 1996), 32.
[41] Cheek, 95.
[42] U.S. Army, "Operation Iraqi Freedom Observations: Quick Look." Information Operations Slide.
[43] Rand Corporation, "Iraq: Translating Lessons Learned into Future DoD Policies," (February 2005), 3-5.
[44] LTC Thomas M. Kastner, U.S. Army, "The Joint Fires Element: An Initial Solution." (U.S. Naval War College: May 2003), 2.
[45] "Iraq: Translating Lessons Learned into Future DoD Policies," 2.
[46] "Iraq: Translating Lessons Learned into Future DoD Policies," 1-2.
[47] Cheek, 94.
[48] Joint Forces Command, Study Report on the Joint Force Fires Coordinator, (Washington, DC: 1997), IV-1.

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